Special Issue: Social Cognition and Self. *Citation:* Gilmour, J. (2015). Formation of Stereotypes. *Behavioural Sciences Undergraduate Journal, 2*(1), 67-73.

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Editor: Famira Racy, MRU

Acknowledgements: The BSUJ acknowledges Dr. Dave Mumby from Concordia University for associate editorial oversight on this article.

Formation of Stereotypes

Abstract

The author of this paper explores the implications of automatic stereotyping in relation to social cognition drawing from the pre-existing literature. The current review is focused on how stereotypes are constructed, activated, maintained, and what cognitive tools are needed in order to change them. The construction of stereotypes is looked at in respect to the stereotype validity model, facial features, the mass media, and the influence society has on perpetuating stereotypes on a global scale. The neural correlates involved in the activation of stereotypes are discussed, including the amygdala, prefrontal cortex, posterior cingulate, and anterior temporal cortex. The current review also includes ways in which cognitive processing can be slowed down to prevent the perpetuation of negative prejudices. Based on the review, future work is still required in the areas of longitudinal and diary studies that look into the long term consequences of the rapid activation and application of stereotypes.

Keywords: stereotyping, prejudice, social cognition, neural correlates, stereotype validity model, facial features, mass media, society

Introduction

Impressions about others are formed quickly and automatically, in most cases, drawing from pre-existing stereotypes. Initial impression formation can become problematic when the automatic association is coupled with a negative stimulus that leads to the reinforcement of a negative stereotype or prejudice. One major focus in the literature has been on the construction and activation of stereotypes. Stereotypes may become activated when a target's information matches the content of a stereotype. Perceivers (those forming impressions about others) often use facial features to classify targets (those others being perceived) based on age, gender, and race, which has been demonstrated by the experiments conducted by (Mason, Cloutier & Macrae, 2006; Krieglmeyer & Sherman, 2012). Empirical evidence gathered by Arendt (2013) shows that the mass media's stereotypical depictions of social groups influence our thinking, feelings and behaviours. How we view others socially, perpetuates the stereotypes that we have about various groups and are used to make sense of others' misfortunes and maintain beliefs about justice (Hun Krieglmeyer, 2014).

The activation of stereotypes has been linked to numerous neural correlates, including the amygdala, the prefrontal cortex, posterior cingulate, and anterior temporal cortex (Forbes, Cox, Schmader, & Ryan, 2012). As stereotypes develop, they become more durable, becoming uncompromising with age. The purpose of the present paper is to combine current knowledge regarding the formation of stereotypes and consider ways in which stereotypic activation can be slowed down and ultimately stopped. It is important to attempt to stop the automatic activation of stereotypes in order to stop negative cognitive associations, or prejudices that occur outside of one's conscious awareness (Forbes, Cox, Schmader, & Ryan 2012). First I will define stereotypes, and then I will discuss how stereotypes are activated through stereotype matching, facial cues and the media as well as the social perpetuation of stereotypes. The paper will then look at the neural correlates involved in stereotype formation and how age influences an individual's likelihood of recalling and drawing stereotypic inferences. Lastly, I will conclude with examples of cognitive precautions to take in slowing down the automatic activation of stereotypes as well as exploring ideas for future research possibilities.

1. What are Stereotypes?

Humans are concerned with making sense of their social environment which comprises of making sense of other people (Krieglmeyer & Sherman, 2012). Impressions of other people and the behaviors that we expect them to exhibit are often influenced by social categories. The information that a perceiver associates with certain categories of people is referred to as a stereotype (Contreras, Banaji, & Mitchell, 2012). Stereotypes are generalized beliefs based on the notion that traits and/or behaviours are collectively held by all the members of a particular social group (Madon, Guyll, Hilbert, Kyriakatos & Vogel, 2006; Le Pelley, Reimers, Calvini, Spears, Beesley & Murphy, 2010). Stereotyping is more likely to occur when an array of social information is offered about the target and the perceiver only has limited cognitive capacity (Madon et al., 2006). Stereotyping always includes an evaluative element and when the element is negative, it is referred to as a stereotypic prejudice (Le Pelley et al., 2010). Stereotypes allow impressions to be made easily and efficiently, but not necessarily accurately (Madon et al., 2006).

2. Stereotype Activation

When an individual encounters a member of a social group or category, stereotypes are activated (Krieglmeyer & Sherman, 2012). Stereotype activation consists of accessing knowledge about social groups while stereotype application is the use of this knowledge in regards to judging others. Stereotype activation is often referred to as an automatic process because it occurs relatively quickly and often outside of one's awareness. For example, when one encounters an out-group member, a fast activation of positive and negative cognitive associations is produced (Forbes, Cox, Schmader, & Ryan 2012). When cognitive processing resources are scarce and/or time pressure is high, then individuals are more likely to access and use stereotypes to form their perceptions of others (Krieglmeyer & Sherman, 2012). Stereotypes can be activated and perpetuated by various influences such as, target matching, facial cues, the media, and social attitudes, explored below.

2.1. Stereotype Matching

Madon and colleagues (2006) found that perceivers are likely to use stereotypes when forming impressions about others when they believe the stereotypic information to be consistent with the target. The stereotype validity model states that a target's individuating information may match the content of a stereotype to a greater or lesser extent. For example, gender stereotypes are better matched when a women is more friendly, nurturing and feminine than when a woman is assertive, competitive and masculine (Madon et al., 2006). This may cause the perceiver to assume that a target who matches a stereotype in some respects will match a stereotype in all respects, which is a fallacious generalization. The perceiver's attention level also interferes with a target's unique information and impressions formed from stereotype matching may lead to self-fulfilling prophecies, in which the perceiver begins to treat the target based on their own assumptions about the target instead of based on actual information related to the target.

A perceiver's relative attention to different categories influences the extent to which a perceiver categorizes a target on that dimension, an individual is categorized on that dimension, which determines the stereotypic attributes ascribed to that individual (Le Pelley et al., 2010). If the perceiver has experienced gender to be more predictive of a person's qualities than race, then gender will have an advantage over race in providing stereotype formation. In this scenario, if the perceiver were to read that a black male had committed an antisocial act, the perceiver would be more likely to believe that it was based on the characteristics that come with being a male and not his race. If the perceiver was paying attention to race they would ascribe to a black male and more black- stereotypical attributes than male-stereotypical attributes. Further, the perceiver's attention to the target is more concentrated when the perceiver have unlimited time or are motivated to form an accurate impression, but less concentrated when the perceiver has limited time or does not care about the accuracy of the impression (Madon et al., 2006).

2.2. Facial Cues

The most valuable source of information for a perceiver is the targets' face (Mason, Cloutier & Macrae, 2006). Social perceivers will often use facial features in order to group people into what they themselves believe to be meaningful social categories which are influenced implicitly by their already held beliefs. Social cognition researchers have found that perceivers tend to classify targets according to age, gender and race. These three primitive categories represent features that are prominent in a person's appearance and hence are immediately obvious to the perceiver (Le Pelley et al., 2010).

Krieglmeyer and Sherman (2012) developed the Stereotype Misperception Task (SMT) in which impressions are formed about people through blurred drawings when a priming picture is shown beforehand. The blurred drawings provide only ambiguous information, so participants may use only accessible knowledge to make their judgment. Pictures of 24 black and 24 white faces, as well as face like shapes were shown as prime stimuli to 60 participants. Blurred black-and-white drawings of faces were used as target stimuli and based on these, participants were asked to rate the drawings based on how threatening or how athletic they appeared. The results found that participants were more likely to judge a target as high in threat or high in athletic appearance when it followed a black prime than when it followed a white or neutral prime. These findings suggest that prime pictures may activate racial stereotypes, both positive and negative, which participants will use when making judgments.

When indicative facial cues are present, the accessibility of a social category being paired with stereotypical information increases (Mason, Cloutier & Macrae, 2006). Mason, Cloutier and

Macrae (2006) conducted an experiment in which 30 undergraduate participants were given a series of names on a screen surrounded by distracting faces with the goal to determine whether the name was associated with a male or a female. On the screen the faces could depict individuals whose gender matched the gender of the target name, for example, two female faces around the name "Janet", or the distracting images could consist of the images being all of the opposite gender, for example, four female faces surrounding the target name, "Andy." The results show that the inconsistent distracting stimuli magnified the interference observed on classifying target names by gender, which suggests that visual cues are hard to ignore. The results also suggest that even with conscious effort and attention, it is hard to stop the mind from automatically classifying the target into a category of age, gender, and/or race, based on facial features.

3. Media and Social Perpetuation

Empirical evidence shows that the mass media's stereotypical depictions of social groups influence our thinking, feelings and behaviours**.** For example, stereotypes are developed and maintained by exposure to these clichéd media representations (Arendt, 2013). Within the mass media framework, stereotypes justify, reinforce and perpetuate racism. Media priming, via newspapers and television, involves processing new information which increases its availability in the perceiver's episodic memory**.** Using an implicit social cognition model to look at media priming, Arendt (2013) writes that the effects associated with media stereotyping can be expanded into implicit and explicit processing. In this view, implicit stereotypes refer to the strength of the automatic association between a group concept (e.g., minority group) and an attribute (e.g., criminal) and how one concept may activate another**.**

Arendt (2013) hypothesized that exposure to stereotypical media content would increase the strength of the automatic association between a group concept and a stereotypical attribute leading to an increase in implicit stereotyping, which would then lead to explicit stereotyping. In the Arendt (2013) study, 185 participants read a total of 12 newspaper texts in a controlled lab experiment. Within the text, the foreign nationality of the offender was mentioned only once in the headline and once in the body of text in each of the 12 articles. Arendt (2013) found that reading tabloid articles in which a specific social group is presented as criminal influenced readers' explicit stereotypes in which they expressed judgment about the prevalence of criminal foreigners in the real-world. The findings also showed that participants' memories were also linked to implicit stereotypes, in which there was an automatic association between categories of foreign country and criminal. The results support the hypothesis that the mass media's influence is directly linked to forming implicit stereotypes which then may increase the likelihood of applying explicit stereotypes.

3.1. Social Perpetuation of Stereotypes

The media's influence on stereotype formation perpetuates certain values held within society. These stereotypical values may be used as tools to maintain beliefs about justice and to make sense of others' misfortunes (Hunzaker, 2014). Otgaar and colleagues (2011) found that that the activation of socially held stereotypes can actually boost or deteriorate memory performance. For example, priming an elderly person stereotype activates elderly-related connotations (e.g., slow, bad memory, dementia), and these, in turn, impact memory performance. Alternatively, in a study in which participants were to think of a college professor and write down everything that they considered typical professor characteristics, participants

answered more Trivial Pursuit questions correctly than participants without a prime condition, enhancing recall.

Hunzaker (2014) hypothesized that individuals may apply attributions about the target to determine the cause of the target's outcome. Perceiving the target to be a member of a particular social group, for example, the poor, activates other information, such as traits, characteristics and attitudes. This individuating information influences the perceiver's judgments. Hunzaker (2014) further hypothesized that negative stereotypes allow individuals to justify one's judgments on others' experience of misfortune, and found that individuals will participate in victim redefinition by drawing on stereotypic prejudices when observing those with low-status adversities. Negative stereotypes shape our societal reactions to low-status others' adversities and are perpetuated to stop the perceiver from feeling vulnerable. The findings suggest that victim redefinition is influenced by the notion of system justification and believing in a just world, another example of how the social perpetuation of stereotypes directly influences our social cognition.

4. Neural Correlates, Durability and Processing of Stereotypes

Stereotypes are commonly regarded as schematic knowledge structures that contain numerous concepts that one may access in guiding their own behaviours (Otgaar et al., 2011). Contreras, Banaji, and Mitchell (2012) hypothesized that if stereotypes are a form of semantic knowledge, the left inferior frontal gyrus and inferior temporal cortex of the brain, which are critical for general semantic knowledge, would also be critical during the activation and retrieval of stereotypes. Individuals' characteristically belong to a variety of social categories and are thus more complex than categories of non-social objects. As well, stereotypes often evoke more emotion than other forms of semantic knowledge. Consistent with stereotypes being more complex than general semantic knowledge, the participants' fMRI results showed that judgments of social categories were associated with regions frequently linked to social cognition, which include the medial prefrontal cortex, posterior cingulate, bilateral tempoparietal junction and anterior temporal cortex. The results suggest that stereotype retrieval has more in common with representing mental states than it does with semantic knowledge associated with non-human retrieval for objects and animals. Further, the results suggest that social group knowledge has little to do with the knowledge of non-social categories. The brain network activated by stereotypes is predominantly associated with the perceiver's beliefs, feelings or opinions on others.

Researchers have found that the neural regions involved in arousal, inhibition and control, are also stimulated when negative stereotypes are activated (Forbes, Cox, Schmader, & Ryan, 2012). Forbes, Cox, Schmader and Ryan (2012) used fMRI scans and functional connectivity analyses to test the hypothesis that negative racial stereotypes will activate brain regions involved with arousal which would further alter the interaction between regions involved in inhibition and control. In the study, white egalitarian participants were shown black and white faces at fast (32 ms) or slow (525 ms) presentation speeds while listening to either violent or misogynistic rap (VMR), no music (NM) or death metal. The results showed that fast exposure to black faces activated the amygdala in both the NM and VMR conditions. Interestingly, in the slow condition, amygdala activation, as well as dorsolateral prefrontal cortex activation only occurred for black faces while listening to VMR. Although white participants were able to control initial arousal reaction to the black faces in the neutral NM context, the prime of violent or misogynistic rap for negative racial stereotypes hinder the regulation of the amygdala

activation. Participants in the VMR condition also showed increased activation in the orbitofrontal cortex and the dorsolateral prefrontal cortex when looking at Black versus White faces. These results are interesting because even with motivation to be non-prejudice, participants react with bias subconsciously to members of a racial out-group (a group of a different race than one's own).

4.1. Stereotype Durability with Age

There are mixed findings regarding the development of stereotypes, however, older adults tend to exhibit greater application of stereotypes than their younger peers (Radvansky, Copeland & Hippel 2010). A decline in inhibitory function can lead older adults to rely more on stereotypes and be more prejudiced than younger adults. When information about the target is ambiguous or incomplete then the perceiver is likely to draw from past experiences, which may result in inaccurate perceptions (Hunzaker, 2014). Radvansky, Copeland and Hippel (2010) found that when reading stereotypical stories, older adults, ranging in age from 60 to 88 years were less likely to constrain stereotypic conclusions than younger adults who ranged in age from 18 to 25 years. The researchers found that older adults were more explicitly prejudice than younger adults even when they had equivalent levels of motivation to be non-prejudiced. After reading the stereotypical stories, older adults were also more likely to recall and draw stereotypic inferences, which were indicated by memory scores and lexical decision times. The research suggests that as we age we are more likely to rely on stereotypes and be prejudiced despite our intentions to be egalitarian. The researchers propose that the findings suggest that older adults fail to inhibit stereotypes at encoding, rather than at other stages in the information processing**.**

4.2. Stopping Stereotype Processing

Due to stereotypes, our perceptions of others are often biased, but with cognitive resources, motivation and time, the effects can be regulated and modified. Activated stereotypes can be counteracted when there is a conscious desire to evaluate an out-group member using a slower, more controlled, non-biased response (Forbes, Cox, Schmader & Ryan 2012). When there is enough time, intention, and cognitive capacity, individuals have the ability to contravene environmental information which can lead to a substantial reduction in activating stereotypes (Arendt, 2013). However, although individuals may consciously negate some stereotypic representations it is very unlikely to be able to negate all stereotypic representations and most individuals simply do not possess the motivation.

5. Future Research

The present paper captures only some of the aspects involved in stereotype formation. Although there is much research regarding the activation of stereotypes, more research is needed on how these activations impact the decision-making process for applying stereotypes. The fact that there are so many influences that act with one another to engage in stereotype formation means that it is very difficult to identify one particular influence on stereotyping outside of experiments. To date, much of the research conducted has involved one time interactions within experimental settings. There is an obvious need for more longitudinal research to investigate the consequences of stereotypes in real world applications. Longitudinal studies, as well as participant diary studies could increase knowledge regarding these effects. In diary studies participants report on their experiences after specific events which would have the potential to

increase understanding of stereotype decision-making factors, immediate reactions, as well as the cognitive, behavioral and emotional processes on long term impression formations.

Conclusion

Stereotypes are activated and constructed by target matching, observing facial features to identify age, gender and race, being influenced by depictions of cultures in the mass media, and by socially perpetuated beliefs and notions that allow perceivers to believe in a safe and just world. Empirical evidence has shown that the neural correlates that respond to stereotypes include the amygdala, the prefrontal cortex, posterior cingulate, and anterior temporal cortex. As stereotypes are formed and maintained, they become harder to change. The more we develop and rely on stereotypes, the more durable they will become. As we age, stereotype activation and application becomes more difficult to constrain. Based on the preceding aspects, the next wave of research should focus on longitudinal, diary studies that look into the long term consequences.

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